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a bobit publication serving surface mass transportation for 83 years

1987-88
Annual Special Edition
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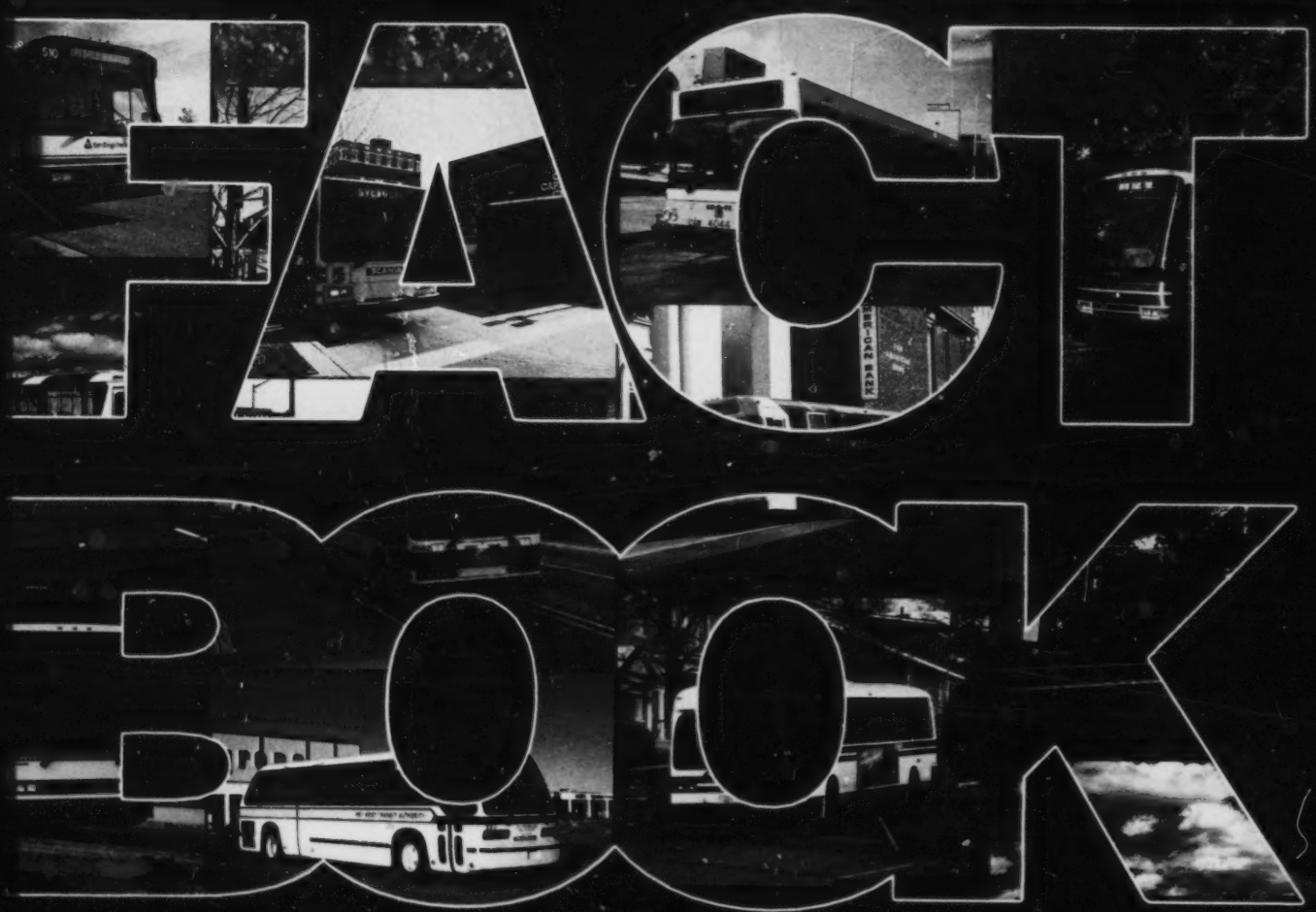

FACT BOOK

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Annual Fact Book 1987-88

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Statistics

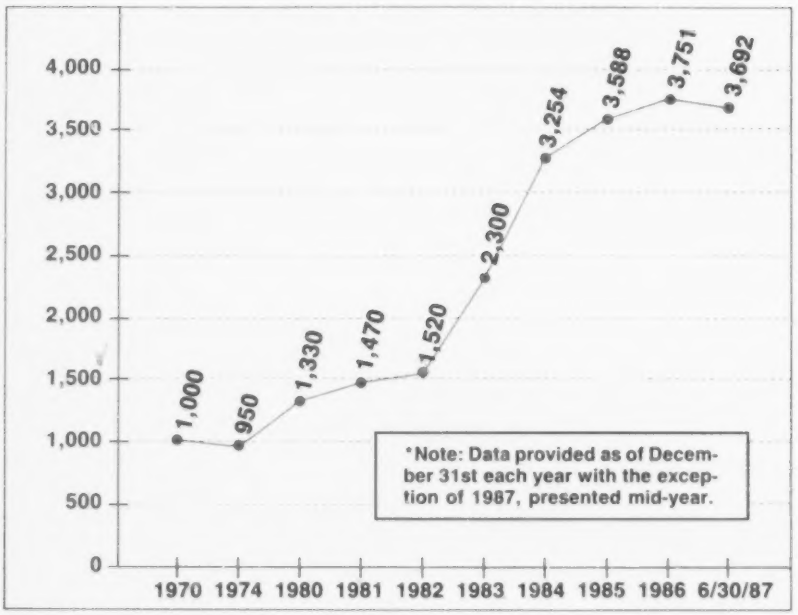
Buses in the United States

State	Commercial Buses Including Transit[1]	Vans & Handicap Buses[2]	Federal Buses[3]	School Buses[4]	Total Buses
Alabama	1,997	465	14	6,684	9,160
Alaska	1,065	254	55	636	2,010
Arizona	1,028	418	335	3,766	5,547
Arkansas	43	913	13	4,209	5,178
California	12,528	3,191	285	19,179	35,183
Colorado	812	425	38	3,905	5,180
Connecticut	2,380	450	19	4,629	7,478
Delaware	319	127	—	1,160	1,606
Florida	3,409	1,185	114	8,224	12,932
Georgia	1,113	738	70	9,675	11,596
Hawaii	2,576	163	18	744	3,501
Idaho	762	164	139	2,003	3,068
Illinois	5,287	388	55	16,433	22,163
Indiana	4,263	733	31	10,797	15,824
Iowa	1,071	557	7	7,091	8,726
Kansas	369	544	6	4,950	5,869
Kentucky	1,116	715	59	6,809	8,699
Louisiana	862	546	24	7,468	8,900
Maine	160	148	22	2,300	2,630
Maryland	3,108	617	95	4,933	8,753
Massachusetts	3,530	675	18	7,759	11,982
Michigan	2,317	860	31	13,648	16,856
Minnesota	2,360	495	36	10,580	13,471
Mississippi	768	611	62	5,110	6,551
Missouri	970	769	78	10,109	11,926
Montana	408	137	67	1,354	1,966
Nebraska	475	219	7	3,438	4,139
Nevada	1,300	187	91	904	2,482
New Hampshire	354	321	1	1,939	2,615
New Jersey	5,000	746	59	12,624	18,429
New Mexico	503	379	390	2,038	3,310
New York	11,827	2,335	96	25,000	39,258
North Carolina	1,899	954	41	12,915	15,809
North Dakota	96	144	27	1,606	1,873
Ohio	8,331	1,447	37	16,604	26,419
Oklahoma	360	641	125	6,385	7,511
Oregon	1,399	324	57	4,627	6,407
Pennsylvania	8,108	1,089	108	19,719	29,024
Rhode Island	350	136	5	887	1,378
South Carolina	874	800	17	6,278	7,969
South Dakota	312	175	40	1,224	1,751
Tennessee	1,699	1,108	43	6,306	9,156
Texas	3,119	1,203	189	24,594	29,105
Utah	319	189	55	1,455	2,018
Vermont	82	156	11	1,220	1,469
Virginia	2,183	543	132	9,130	11,988
Washington	735	1,244	185	6,112	8,276
West Virginia	878	461	23	3,032	4,394
Wisconsin	1,529	641	30	6,983	9,183
Wyoming	804	110	1	1,389	2,304
District of Columbia	2,259	59	261	—	2,579
TOTAL	109,416	31,899	3,722	350,564	495,601

1) Commercial Buses include transit, intercity, tour and charter buses.
2) Includes buses and vans owned by Section 18 and Section 16 (b) (2) rural and specialized transportation agencies. It also includes a few privately owned vans and buses.
3) Federal Buses include those owned by various federal agencies such as the U.S. Post Office, General Services Administration, and the Veterans Administration. This column does not include federally funded transit buses or military buses.
4) Includes school buses owned by states, counties, municipalities, and school districts. Also included are privately owned school buses, and some institutional and industrial buses registered free or at a reduced rate.

SOURCE: U.S. DOT, Federal Highway Administration, Table MV-10; Motor Vehicle Manufacturers Association; U.S. DOT, Director of Rural & Specified Transit Operators; School Bus Fleet Magazine/State Directors of Pupil Transportation.

Number of Intercity/ Tour/Charter Companies
(Includes All Classes Of Carriers)



SOURCE: Interstate Commerce Commission

It appears that the number of applications for charter authority has finally leveled off, after the steep 1983 increase which occurred on the heels of the 1982 signing of the Bus Regulatory Reform Act. According to data from the Interstate Commerce Commission, the total number of applicants peaked at the end of 1986 at 3,751. Through the first six months of 1987, the number of applicants actually declined as some companies simply pulled out altogether. Keep in mind that at this writing nearly three months of the year remain so additional applications may be forthcoming. The new wrinkle this year, of course, is UMTA's new charter bus regulations. More than a decade in the making, the regs were issued May 13, 1987. Among the provisions, one mandated August 11th as the cutoff date for public transit authorities to apply for new charter authority without special permission from UMTA. It will be several months yet for the effects of new regulation to show in the data.

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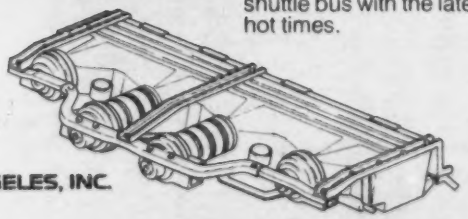
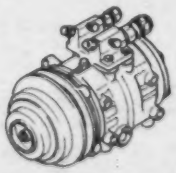


COOLING UNIT



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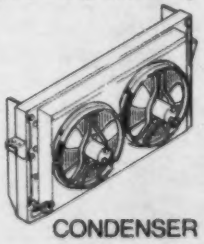

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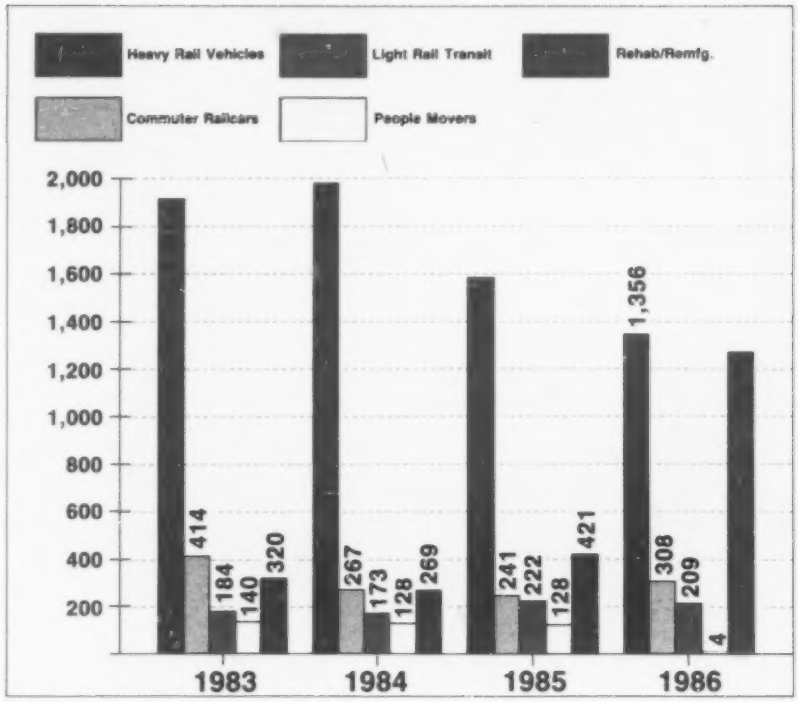
The fourth *METRO Magazine* Railcar Backlog Survey, conducted annually in the spring, revealed an interesting trend toward rehabilitation of railcars. The survey showed 1,273 railcars were then on the rehabilitation order boards. This represented an increase of more than 300% in rehabilitation contracts from the year before. The survey also showed 1,964 new railcars on order, including 1,356 heavy railcars, 209 light railcars, 308 commuter railcars, and 91 specialized rail vehicles such as monorails. The backlog of railcars has fallen more than 15% from the year before (and follows declines of 19% and 26% percent from the preceding two years.) This survey is conducted only once a year so it does not accurately reflect conditions in the fall. It should be noted that several contracts for railcars including 213 being produced by Bombardier for the NYCTA, as well as contracts for Atlanta and Baltimore, have been delivered since the survey was completed.

1986 Railcar Backlog



SOURCE: Bobit Research Department

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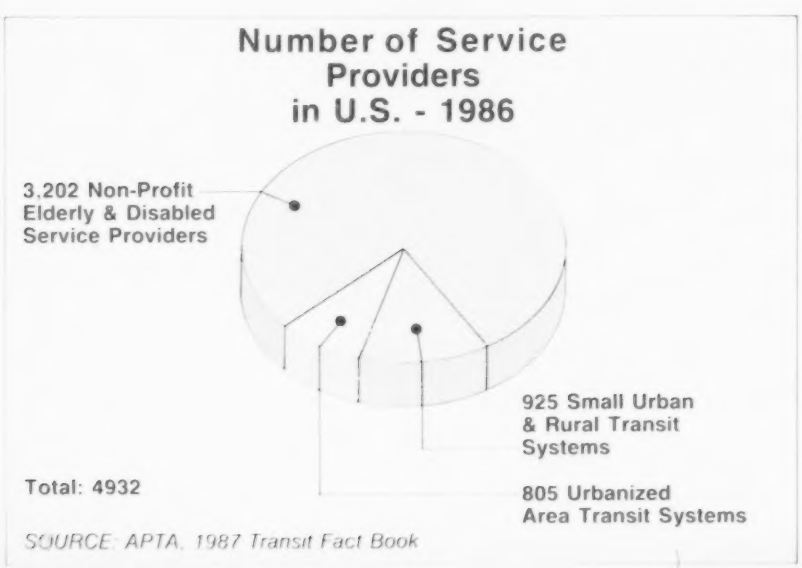
National Profile of Rural and Specialized Transportation Agencies in the United States

	Agencies Funded Under:			
	Sec. 18	Sec. 16(b) (2)*	Subcontractors**	All Agencies
Number of Agencies —	1,025	3,237	225	4,487
Percent Which Are:				
Public Agencies —	57.4%	0.2%	28.4%	13.6%
Private Nonprofits —	37.1%	99.3%	35.1%	83.6%
For-Profits and Others —	5.5%	0.5%	36.5%	2.8%
Number of Providers —	939	3,167	225	4,331
Percent Providing:				
Demand-Responsive Service —	68.5%	43.6%	64.7%	51.1%
Fixed Route Service —	54.5%	38.5%	45.9%	43.1%
Semi-Fixed Route Service —	32.9%	36.8%	34.6%	35.7%
User-Side Subsidy —	5.4%	2.4%	3.8%	3.3%
Client Transportation —	6.1%	20.4%	7.5%	16.0%
Other Forms of Service —	16.9%	17.5%	24.1%	17.6%
Percent Reporting Use of Private Sub-contractors for Part of Service —	29.0%	17.3%	16.1%	20.5%
Fleet Information:				
Total No. Vehicles —	12,136	16,694	2,894	31,724
Average per Agency —	12.9	5.3	12.9	7.3
Percent Life/Ramp-Equipped —	28.3%	31.6%	32.9%	30.4%
Percent Radio-Equipped —	63.6%	37.9%	81.7%	52.2%
Ridership:				
Total Annual Trips —	172,405,720	90,343,470	27,401,490	290,150,380
Average per Agency —	183,610	28,530	121,780	66,990
Total Individuals Served —	6,280,860	2,652,030	642,180	9,575,070
Average per Agency —	6,690	840	2,850	2,210

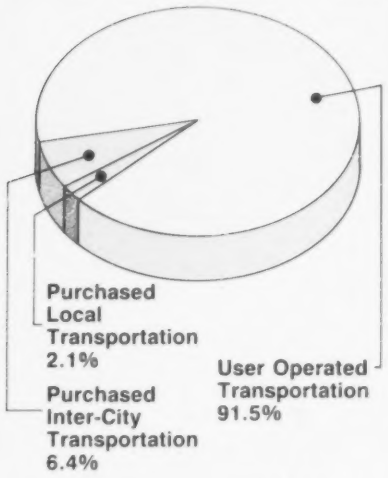
* Excluding 209 funded under Section 18 as well.
** Excluding those also funded under Sections 18 and/or 16(b) (2).

SOURCE: US-DOT, Directory of Rural and Specialized Transit Operators

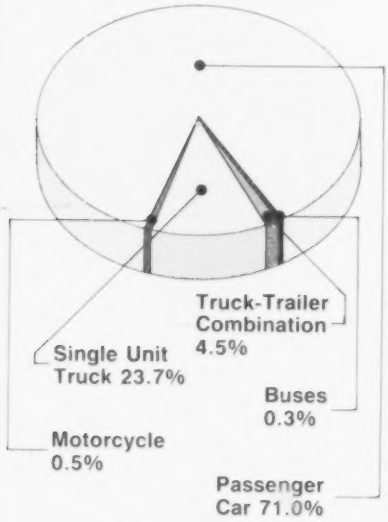

Number of Service Providers in U.S. - 1986
3,202 Non-Profit Elderly & Disabled Service Providers
925 Small Urban & Rural Transit Systems
805 Urbanized Area Transit Systems
Total: 4932
SOURCE: APTA, 1987 Transit Fact Book

The data above lists all the known agencies funded under Section 18 and/or Section 16(b)(2) of the UMT Act of 1964, as amended. What the data shows is the presence of private nonprofit agencies in the field of transportation. This is the first time the study was done so it is not yet possible to identify trends. Over one-third of Section 18 funds and more than 99% of the Section 16(b)(2) funds are dispersed through nonprofits. This pattern has little effect on public transit but is of major concern to the private bus industry which view nonprofit agencies as competitors. The pie chart (left) shows there are more than 4,900 service providers of all types in the U.S.

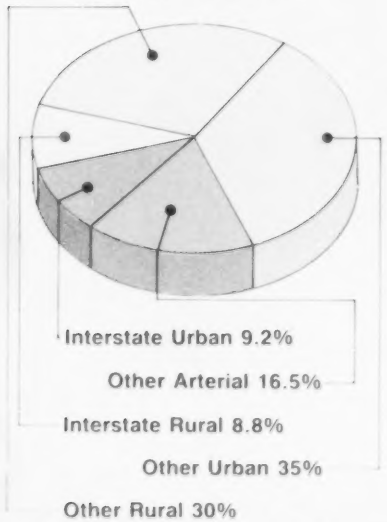
Personal Expenditures For Transportation By Mode, 1986



Travel By Type Of Vehicle



All Bus Travel By Type Of Road



SOURCE: Motor Vehicle Manufacturers Association

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Personal Consumption Expenditures For Transportation* (In Millions)

Total User-Operated Transportation	**$109,172**	**$ 144,024**	**$ 183,693**	**$ 216,774**	**$ 243,664**	**299,400**	**$ 320,273**	**$ 326,027**		
Purchased Local Transportation										
Transit Systems	$ 1,822	$ 2,015	$ 2,243	$ 2,431	$ 3,038	$ 3,429	$ 3,567	$ 3,773		
Taxicabs	1,687	2,208	2,617	3,082	2,953	3,044	3,128	3,250		
Railway Commuter	201	226	242	300	395	461	470	518		
Total Purchased Local Transportation	**$ 3,710**	**$ 4,449**	**$ 5,102**	**$ 5,813**	**$ 6,386**	**$ 6,934**	**$ 7,165**	**$ 7,541**		
Purchased Intercity Transportation										
Railway Excluding Commutation (Amtrak)	$ 288	$ 281	$ 261	$ 362	$ 445	$ 583	$ 630	$ 667		
Intercity Bus	732	761	847	1,171	1,252	1,225	1,161	1,037		
Airline	5,528	7,120	9,331	13,425	14,653	17,545	18,559	18,657		
Other	356	468	639	939	1,236	1,640	2,040	2,310		
Total Purchases Intercity Transportation	**$ 6,904**	**$ 8,630**	**$ 11,078**	**$ 15,897**	**$ 17,586**	**$ 20,993**	**$ 22,390**	**$ 22,671**		
Total Transportation	**$119,786**	**$ 157,103**	**$ 199,873**	**$ 238,484**	**$ 267,636**	**$ 327,327**	**$ 349,823**	**$ 356,239**		
Total Personal Consumption Expenditures	**$916,543**	**$1,129,348**	**$1,403,501**	**$1,732,559**	**$2,050,661**	**$2,428,194**	**$2,600,466**	**$2,762,542**		

(1) New and used trucks, recreation vehicles, etc. *—Revised

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis

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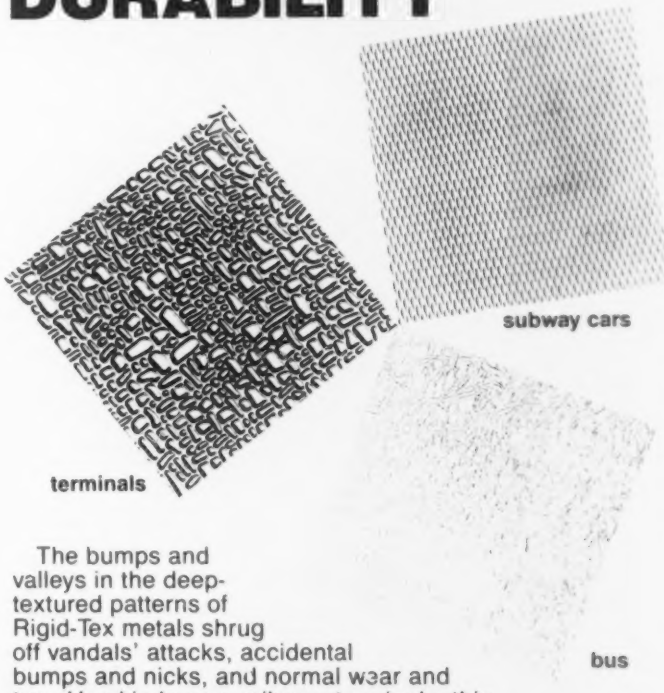

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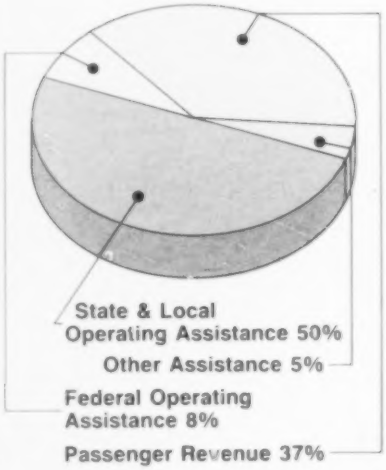
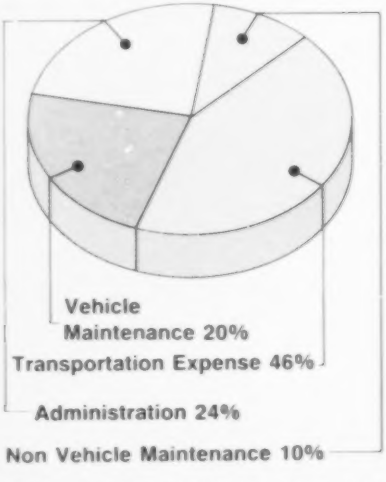
Transit Revenue in 1986



SOURCE: APTA, 1987 Transit Fact Book

Transit Expenses in 1986



SOURCE: APTA, 1987 Transit Fact Book

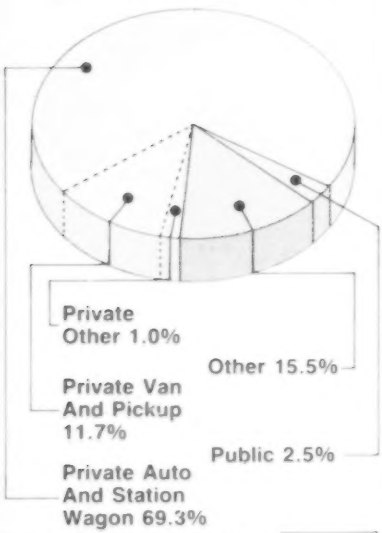
Person-Trips, By Trip Purpose, and Mode of Transportation

Trip Purpose	PRIVATE				PUBLIC					
	Auto & Station Wagon	Vans & Pickups	Other (1)	Total	Bus & Street Car	Subway; Elevated Rail	Other (2)	Total	Other (3)	All
Earning A Living										
Home-to-Work	69.6%	16.5%	1.3%	87.4%	3.0%	0.8%	0.8%	4.6%	8.0%	100.0%
Work Related	63.8	17.7	2.8	84.3	1.6	1.1	2.8	5.5	10.2	100.0
Subtotal	69.0	16.6	1.5	87.1	2.8	0.9	1.0	4.7	8.2	100.0
Family & Personal Business										
Shopping	77.2	10.3	0.8	88.3	0.7	0.1	0.1	0.9	10.8	100.00
School/Church	50.6	4.8	0.4	55.8	4.4	0.1	0.2	4.7	39.5	100.00
Doctor or Dentist	82.3	8.0	0.2	90.5	1.7	1.0	1.6	4.3	5.2	100.00
Other	72.3	14.0	1.0	87.3	0.8	0.2	0.2	1.2	11.5	100.00
Subtotal	69.0	10.1	0.7	79.8	1.7	0.1	0.2	2.0	18.2	100.00
Social & Recreation	70.1	10.0	1.0	81.1	1.0	0.2	0.6	1.8	17.1	100.00
Other	68.9	14.1	0.6	83.6	0.9	—	0.2	1.1	15.3	100.00
ALL PURPOSES	**69.3**	**11.7**	**1.0**	**82.0**	**1.7**	**0.3**	**0.5**	**2.5**	**15.5**	**100.00**

(1) Includes other trucks, motorcycle and motorized. (2) Includes train, airplane and taxi. (3) Includes bicycle, walk, school bus, moped, and other modes not elsewhere classified.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis

Person Trips By Mode Of Transportation



Privately Owned Vehicles

SOURCE: Motor Vehicle Manufacturers Association

Cars and Locomotives in Rail Transit Service

Type	In Service
Heavy Rail	11,238
Light Rail	1,481
Commuter Rail	
Electric	2,238
Coach	1,906
Diesel	104
Locomotives	379
Other Rail Modes	66

SOURCE: American Public Transit Association

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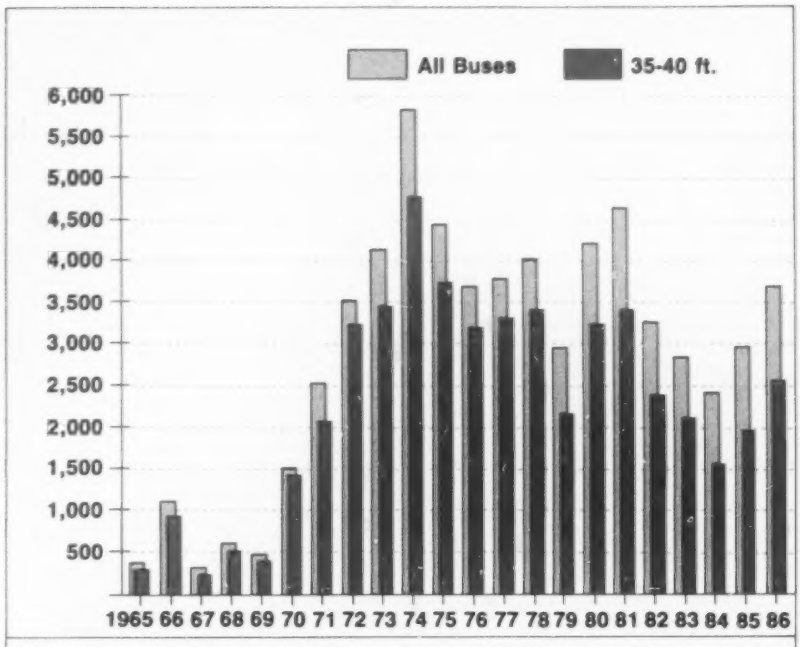
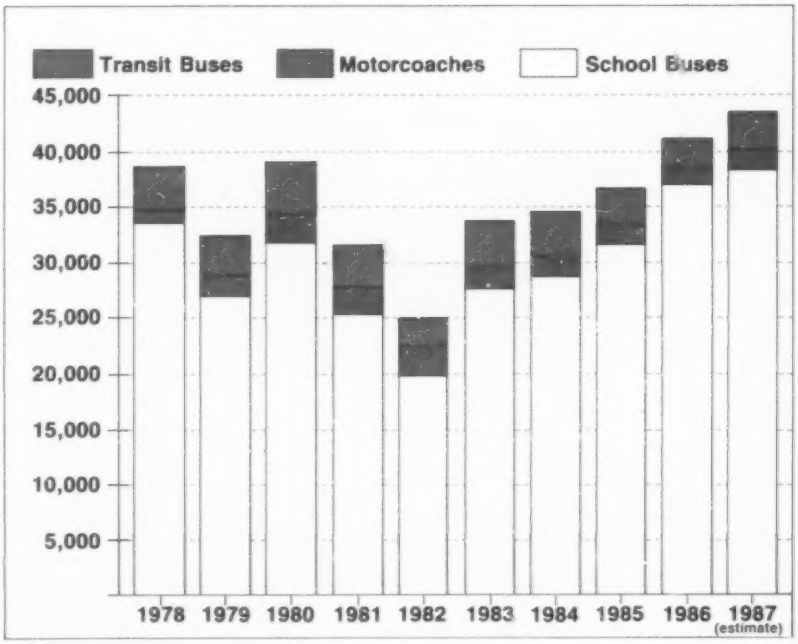
UMTA Funded Transit Buses 1965-86



From 1965 through 1986 UMTA has funded 63,286 transit buses of which 51,315 were standard 35-40 ft. buses.

SOURCE: Urban Mass Transportation Administration

Annual U.S. Bus Sales 1978 - 86



SOURCE: UMTA, Bobit Research.

It should be noted that school buses always lead bus sales in the United States. School buses are the largest segment, followed by transit buses and intercity/motorcoaches in that order. The 1987 projections are based on bids to date projected to the end of the year.

CJSTS-5

January / February '88

METRO Magazine

a bobit publication serving surface mass transportation for 84 years

50 Largest Private Fleets
Charter Operator's Guide

Plus: Year In Review, Brake Developments, Tour Bus Roundup, NYCTA Training Center

METRO® Magazine

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vol. 84 no. 1

BOBIT PUBLISHING

January / February '88

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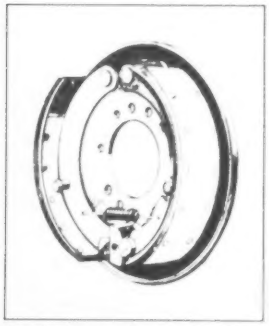

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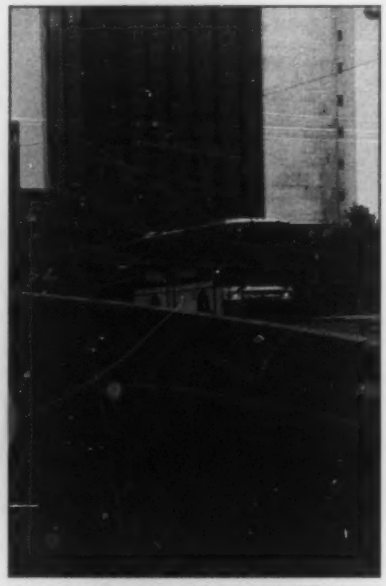
50 Largest Private Motorcoach Fleets

METRO's second annual survey of the largest private carriers in North America reveals continuing acquisition and merger trends.

The problem with surveys is that they seem to raise more questions than they answer. When all the numbers are in and tabulated, the totals need to be thoughtfully re-examined, not so much for mathematical accuracy, but for what they say about the subject they represent. In this second annual survey of the 50 largest private motorcoach fleets in the industry, the editors of *METRO Magazine* discovered — not surprisingly — that the charter/tour industry is still very much alive and definitely changing.

Over the past year, many companies have changed names, merged, or in some cases, ceased altogether. The most notable shift, of course, was the acquisition of Trailways Lines, Inc., by GLI Holdings, Inc., the parent company of Greyhound Lines. This change meant that the number two spot on the guide is now occupied by Shortway/Northstar of Toledo, Ohio, while the number three spot is held by Voyageur Enterprises, Inc., one of two Canadian companies represented on the 1987 survey.

This year, the largest 50 fleets reported owning or leasing a total of 9,549 motorcoaches, which compares with last year's reported total of 9,995 buses. The decline of nearly 500 vehicles stems from the fact that GLI did not acquire the entire fleet of either Greyhound Corp. or Trailways Lines, Inc. GLI Holdings only purchased 2,600 buses from Greyhound's 2,800-bus fleet, and 425 buses from Trailways' 1,550-bus fleet. As a result, an estimated 1,300 motorcoaches were put out on the secondary market or retired. A further change will occur early in 1988 when Greyhound Lines returns approximately 350 coaches it leased last summer.



New to the survey this year is Michigan Trailways with 68 motorcoaches.

As of June 1, 1987, 3,661 private operators had applied to the Interstate Commerce Commission (ICC) for charter and tour authority. When last year's survey was compiled, 3,669 companies had submitted applictions. Now that deregulation has been in effect for four years, it seems that the number of new-comers to the industry is tapering off. Considering the steady number of applications, clearly, many charter and tour companies operate smaller fleets. It is interesting to note, however, that at least 186 transit authorities were among the applicants who submitted requests for charter authority to the ICC.

It is also interesting to note the number of New Jersey-based operators. This year's survey includes eight charter and tour operators who are headquartered within New Jersey. Of those companies, five have more than 100 buses in their fleets. The East Coast appears to be the stronghold for the industry as a whole, with 14 other large operators in addition to the eight New Jersey companies. California has its share of operators, with a total of six operators, most with less than 70 buses.

In order to compile this year's survey, the *METRO* staff mailed applications to known large fleets and followed up with numerous phone calls. Among the comments heard, was one from an operator who felt that his business could expand if only he could locate qualified driver/tour guides. Although training programs exist (see "The Highway to Success" article beginning on page 48), a shortage of qualified personnel adds difficulty to an industry that has been rocked by changes.

If your company owns 40 or more buses and was left off this list, please contact the managing editor of *METRO Magazine* by calling (213) 376-8788.

Largest 50 Private Operators

RANK	CARRIER, CITY	FLEET MIX/SIZE			PASS' Per Year	REVENUE MILES OPERATED		
		Owned	Leased	Total		Linehaul	Charter	Total
1	Greyhound Lines Dallas, TX	1,077	2,659	3,736	40.2 mil	N/A	N/A	6.2 bil
2	Shortway/Northstar Toledo, OH	400	20	420	10 mil	N/A	N/A	20 mil
3	Voyageur Enterprises, Ltd. Montreal, Quebec	350	0	350	5 mil	27.6 mil	2.3 mil	30 mil
4	Academy Lines, Inc. Hoboken, NJ	199	140	339	9.4 mil	5.6 mil	17.5 mil	23.1 mil
5	Suburban Transit Corp. New Brunswick, NJ	190	74	264	7 mil	9.2 mil	1 mil	10.2 mil
6	Shortline Mahweh, NJ	250	0	250	2.5 mil	2.2 mil	0.5 mil	2.7 mil
7	Jefferson Lines Minneapolis, MN	219	10	229	1 mil	6.9 mil	5.1 mil	12 mil
8	New York Bus Service Bronx, NY	190	0	190	4 mil	6 mil	0	6 mil
9	Rockland Coaches, Inc. Bergenfield, NJ	175	0	175	6 mil	6.5 mil	0.6 mil	7.1 mil
10	Kerrville Bus Co. San Antonio, TX	143	30	173	400,000	2.7 mil	1.8 mil	4.5 mil
11	Westours Motorcoaches, Inc. Seattle, WA	152	0	152	500,000	0.6 mil	1.6 mil	2.2 mil
12	Blue Bird Coach Lines Olean, NY	130	0	130	2 mil	0.1 mil	7.4 mil	7.5 mil
13	Peter Pan Bus Lines Springfield, MA	108	13	121	1.3 mil	3.8 mil	3.7 mil	7.5 mil
14	LTR Stage Lines Las Vegas, NV	95	25	120	N/A	5.7 mil	1.3 mil	7 mil
15	Arizona Southern Coach Lines Phoenix, AZ	36	84	120	4 mil	0.4 mil	3.6 mil	4 mil
16	Leisure Line Mahweh, NJ	105	0	105	2 mil	N/A	N/A	11 mil
17	Gray Coach Lines Toronto, Ontario	101	0	101	8.8 mil	N/A	N/A	22.8 mil
18	Carolina Coach Co. Raleigh, NC	100	0	100	1 mil	6.8 mil	0	6.8 mil
19	Hudson Bus Lines Medford, MA	100	0	100	166,000	1.5 mil	1.5 mil	3 mil
20	Blue & White Lines, Inc. Altoona, PA	92	0	92	N/A	N/A	N/A	3 mil
21	Plymouth & Brockton Street Railway Co., Plymouth, MA	86	5	91	1.2 mil	2.6 mil	0.7 mil	3.3 mil
22	A-1 Bus Lines, Inc. Miami, FL	85	0	85	500,000	N/A	N/A	N/A
23	DeCamp Bus Lines Montclair, NJ	67	13	80	2.6 mil	19.2 mil	4.8 mil	24 mil
24	Adirondack/Pine Hill Trailways Kingston, NY	69	9	78	846,835	4.1 mil	1.2 mil	5.3 mil
25	Frank Martz Coach Co. Wilkes-Barre, PA	78	0	78	N/A	N/A	N/A	3 mil

Largest 50 Private Operators *(continued)*

RANK	CARRIER, CITY	FLEET MIX/SIZE			PASS* Per Year	REVENUE MILES OPERATED		
		Owned	Leased	Total		Linehaul	Charter	Total
26	Gray Line Tours Co. Los Angeles, CA	73	0	73	450,000	N/A	N/A	0.5 mil
27	**Bonanza Bus Lines** **Providence, RI**	**72**	**0**	**72**	**1.9 mil**	**6.2 mil**	**0**	**6.2 mil**
28	Shoup Buses/Tri-State Coach Middlebury, IN	72	0	72	N/A	2.6 mil	1.7 mil	4.3 mil
29	**Roberts Holiday Lines** **Santa Ana, CA**	**68**	**0**	**68**	**516,000**	**0**	**2.5 mil**	**2.5 mil**
30	Michigan Trailways Clio, MI	56	12	68	240,000	0.3 mil	2.3 mil	2.6 mil
31	**T.N.M. & O Coaches Inc.** **Lubbock, TX**	**59**	**8**	**67**	**327,857**	**6.1 mil**	**1 mil**	**7.1 mil**
32	Zanetti Bus Lines Rock Springs, WY	65	0	65	755,398	1.1 mil	0.1 mil	1.2 mil
33	**Continental Air Transport** **Chicago, IL**	**36**	**24**	**60**	**1 mil**	**3.2 mil**	**1.2 mil**	**4.4 mil**
34	Goldline/Grayline, Inc. Washington, D.C.	60	0	60	700,000	0	2.5 mil	2.5 mil
35	**Carl R. Bieber Tourways** **Kutztown, PA**	**60**	**0**	**60**	**613,618**	**1.8 mil**	**1.5 mil**	**3.3 mil**
36	Amador Stage Lines Inc. Sacramento, CA	60	0	60	277,104	1.4 mil	1.7 mil	3.1 mil
37	**Keeshin Charter Service** **Chicago, IL**	**52**	**8**	**60**	**2.1 mil**	**1.4 mil**	**1 mil**	**2.4 mil**
38	Lake Front Trailways Cleveland, OH	55	0	55	N/A	N/A	N/A	N/A
39	**Capitol Trailways of PA** **Harrisburg, PA**	**52**	**0**	**52**	**608,671**	**2.9 mil**	**1.2 mil**	**4.1 mil**
40	Vermont Transit Burlington, VT	52	0	52	530,000	4 mil	1 mil	5 mil
41	**Eyre Bus Service, Inc.** **Glenelg, MD**	**51**	**0**	**51**	**N/A**	**N/A**	**N/A**	**2.2 mil**
42	Royal Coach Tours San Jose, CA	50	0	50	500,000	0	0.8 mil	0.8 mil
43	**Starr Tours** **Trenton, NJ**	**48**	**0**	**48**	**461,092**	**0.5 mil**	**2.3 mil**	**2.8 mil**
44	Ray & Ross Transport, Inc. Las Vegas, NV	45	0	45	476,810	2.1 mil	0.4 mil	2.5 mil
45	**Indian Trails, Inc.** **Owosso, MI**	**38**	**6**	**44**	**247,072**	**1.2 mil**	**1.1 mil**	**2.3 mil**
46	Orange Belt Stages Visalia, CA	41	0	41	360,000	0.1 mil	1.9 mil	2 mil
47	**Connecticut Limousine Service** **Milford, CT**	**37**	**3**	**40**	**500,000**	**2.9 mil**	**0.1 mil**	**3 mil**
48	Domenico Bus Service Bayonne, NJ	40	0	40	1.2 mil	N/A	N/A	2.6 mil
49	**Lamers Bus Lines** **Green Bay, WI**	**37**	**0**	**37**	**N/A**	**0.1 mil**	**2 mil**	**2.1 mil**
50	Peerless Stages, Inc. Oakland, CA	32	3	35	N/A	0.5 mil	1 mil	1.5 mil

(Footnote: Many of the figures for the miles operated are estimated.)

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Airport Ground Transportation in 1990's
Maintenance Survey, Engi

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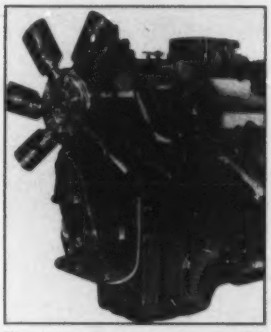

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1988 Transit Bus Survey

METRO's third maintenance survey profiles public transit maintenance practices.

Computerization of maintenance operations is on the rise, with almost half of all properties surveyed reporting that they are using computers. In 1985, the first year the survey was conducted, only 17% of the properties were computerized, which indicates a 32% increase in computerization. Today, only 10% of our respondents reported that their operation does not utilize computers.

During January 1988, the editors of *METRO Magazine* mailed survey forms to 497 transit properties throughout the United States. Canadian properties were not surveyed. Private companies who operate in intercity, charter or tour services also were excluded. Our survey focused on public agencies, with minimal representation by private companies who provide extensive public service. A total of 123 surveys were returned but incomplete surveys were not utilized. Our results are based on a total of 92 responses, which represents a 18.5% response rate.

Although the return rate for this year's survey appears to be moderate, the total number of standard, articulated, and small transit buses reported by the properties surveyed comes to 23,383, which represents 43.7% of the nation's 53,470 buses (according to the American Public Transit Association's 1987 *Transit Passenger Vehicle Fleet Inventory.* This survey has a higher percentage and better sample of large properties than was obtained in the 1986 Second Annual *METRO Magazine* transit maintenance survey, where 37% of the nation's buses were represented. (*Editor's note: METRO's* transit maintenance surveys are conducted once every 12 to 18 months.)

Among the 92 properties who responded, 53 were agencies of a municipal government, nine were agencies of a state government, and 29 responses were returned from regional transit authorities. Responses were received from 27 states in the continental U.S.

Further evidence that this year's survey represents an increased number of larger agencies is found in the substantial number of articulated buses reported by the

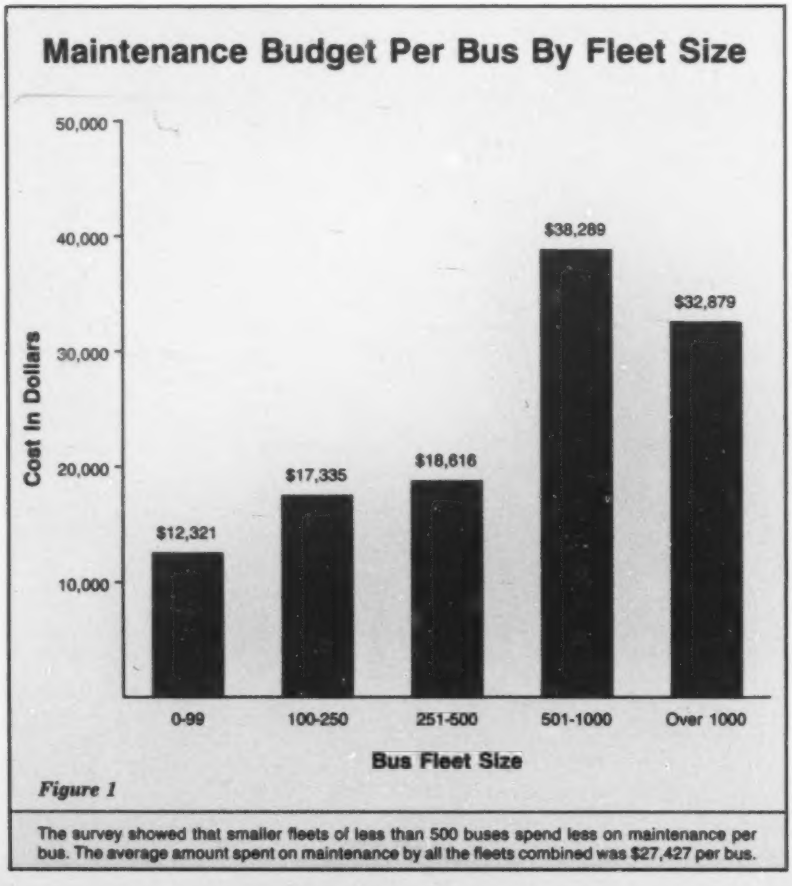

Figure 1

The survey showed that smaller fleets of less than 500 buses spend less on maintenance per bus. The average amount spent on maintenance by all the fleets combined was $27,427 per bus.

properties. Larger properties tend to have articulated buses in their fleets, and our survey includes 12 articulated fleets, with a total of 980 articulated buses.

Of the agencies who have articulated vehicles, the average total fleet size (including standard and small transit buses) is 1,028, while the average number of articulated buses in the fleet is 81. Our survey represents approximately 55% of all the articulated buses in the nation.

Seventy-nine properties report owning a total of 20,171 standard buses, while 68 properties own a total of 1,126 buses measuring 30-ft. or less.

Ninety-one percent of the agencies surveyed have a formal maintenance budget. For all fleets, the average amount spent per bus is $27,564.

Of the eight agencies who did not report having a formal budget, all were agencies who operate fleets of less than 100 buses, which is consistent with previous surveys — in the first annual survey, nine agencies reported they had no formal budget. Clearly, most agencies must account for dollar outlay, which makes a formal budget necessary.

This year, 79 agencies reported the total budget for the current budget period, excluding fuel and tires. In order to analyze the responses, fleets were divided into groupings as follows: fleets of less than 100 buses; fleets of 100 to 250 buses; fleets of 251 to 500 buses; fleets of 501 to 1,000 buses, and fleets of 1001 or more buses.

Of the 51 fleets with less than 100 buses, the annual maintenance budget was $411,449 while the figure for the 14 agencies with fleets of 100 to 250 averaged $2,781,151. The six agencies with fleets of 251 to 500 buses had an average maintenance budget of $6,317,333; the four agencies with 501 to 1,000 buses averaged $25,127,250, while the five agencies with 1,000 or more buses had an average budget of $45,623,000.

Figure 1 shows the average maintenance budget per bus by fleet size. The much higher maintenance cost per bus in the 501 to 1000 fleet-size category may be due to differences in how properties record their maintenance budgets. Wayne Hale, maintenance manager for VIA Metropolitan in San Antonio, Texas, explains, "For many years in this industry, it has been difficult to get people to use the same standards in reporting figures. Some maintenance operations include all their route maintenance in their totals, while some don't. Agencies that plan their budgets with different criteria in mind will end up with figures that can't be compared." Hale believes that the lack of agreement makes it difficult to compare accident rates, hub miles, roadcalls, and other categories. "Until we come to some kind of understanding about terms, it will be very difficult to compare properties," he says. "It would help us all if we could, but there doesn't seem to be a quick answer to the problem."

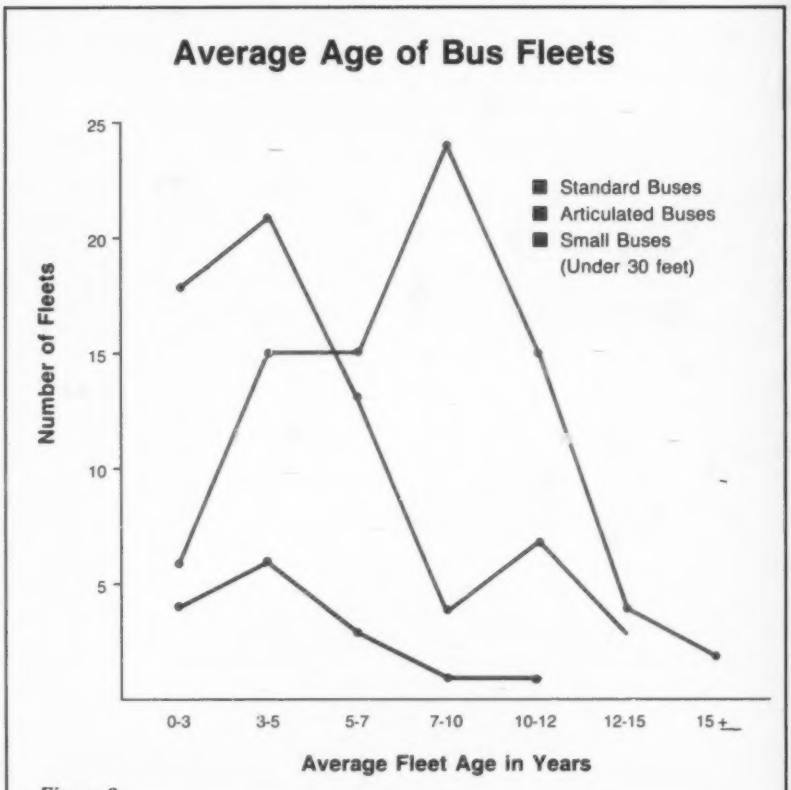

Figure 2

Survey results showed that on the average, smaller bus fleets and articulated bus fleets are newer than standard length vehicles.

The average age of all standard buses in our survey is 7.5 years, while the average age of small buses is 5.1 years. Articulated buses have an average age of 4.4 years, which is significantly lower than the averages reported for other types of buses.

Maintenance efficiency is often measured by hub miles, the total number of miles achieved by a bus as opposed to revenue or service miles. This year's survey asked respondents to report hub miles achieved per maintenance employee. The results were as follows:

- fleets of 100 buses or less averaged 104,893 hub miles per employee,
- fleets of 100 to 250 buses averaged 96,474 hub miles per employee,
- fleets of 251 to 500 buses averaged 67,236 hub miles,
- fleets of 501 to 1,000 buses averaged 67,183 hub miles,
- while fleets of 1,000 or more averaged 63,211 hub miles per maintenance employee.

The survey also asked properties to supply the hub mile figure by

coach type in their fleets. Of 79 standard fleets, the average was 36,558 hub miles; for 12 articulated fleets, the average came to 27,346, while the 60 small bus fleets averaged a total of 30,118 hub miles.

Compared to the second annual survey, it seems that standard buses are achieving more hub miles. In 1986, standard bus fleets averaged 32,336 hub miles, which means there has been a 12% increase. Hub miles for articulated fleets stayed about the same, while hub miles for small bus fleets have increased 10%.

Miles between road calls, or the mean distance between road failure, is a standard measurement of a fleet's efficiency. In order to achieve figures that could be analyzed, the survey defined a roadcall as "mechanical breakdowns that cause a service delay of ten minutes or more."

Agencies with less than 100 buses reported an average of 14,764 miles between roadcalls, while agencies with 501 to 1,000 buses averaged only 6,951 miles between road failures. Fleets with 1,000 or more buses averaged 9,496 miles.

Seven properties report MDBR figures by other standards, so those responses were excluded from the total. According to Hale, fleets define roadcalls by different standards — a roadcall may be any report from a driver about a problem with the bus, while another property may consider a roadcall a breakdown that requires a wrecker.

"We all seem to have different ways of counting," says Hale. "That makes it difficult to compare two properties because it's like comparing apples to oranges." At VIA Metropolitan, for example, two sets of roadcall figures are maintained — one to meet UMTA Section 15 guidelines, and one to help the property track its efficiency. "'We consider any off-site incident that requires attention from maintenance to be a roadcall," explains Hale. "A flat tire is a roadcall, but so is a bus change."

Figure 3 shows MDBR by fleet size. Interestingly, fleets with less than 100 buses have improved their MDBR over the last survey conducted. Small fleets doubled the amount of miles between roadcalls, while all the other fleet groupings also showed significant improvements in MDBR. A conclusion could be made that today's fleets are working more efficiently and that today's buses are more reliable. However, the disparity can also be attributed to automation. Because more transit properties track figures with computers, roadcall definitions reflect the parameters set by the computer program being used. "There are almost as many definitions of roadcalls as there are computer programs," says Hale.

Training programs are an important part of most transit agencies' operations. Eight agencies do not offer any kind of maintenance training, and all were properties with less than 100 buses. Six agencies only offered in-house training, and all represented properties with bus fleets of less than 100 vehicles. Ninety-one percent of all agencies who answered the question offer in-house training, manufacturer training, or a combination of both.

As mentioned earlier, computerization of maintenance operations is increasing. This year, we found that 82% of all properties surveyed are computerized or are in the process of installing computer systems. In the first annual survey, only 17% of the properties were computerized while 56% were in the process. Our survey shows that 44 properties have systems already in place while 29 properties are in the process of shifting to computers. Only 16 properties out of the 89 properties who replied to the question are not computerized. With an increased use of common parts and the need to record increasing amounts of information, computerization is almost a must. Hale notes that the sophistication of software programs still seems to lag. "We have had to customize our program and modify it to reflect our own needs." M

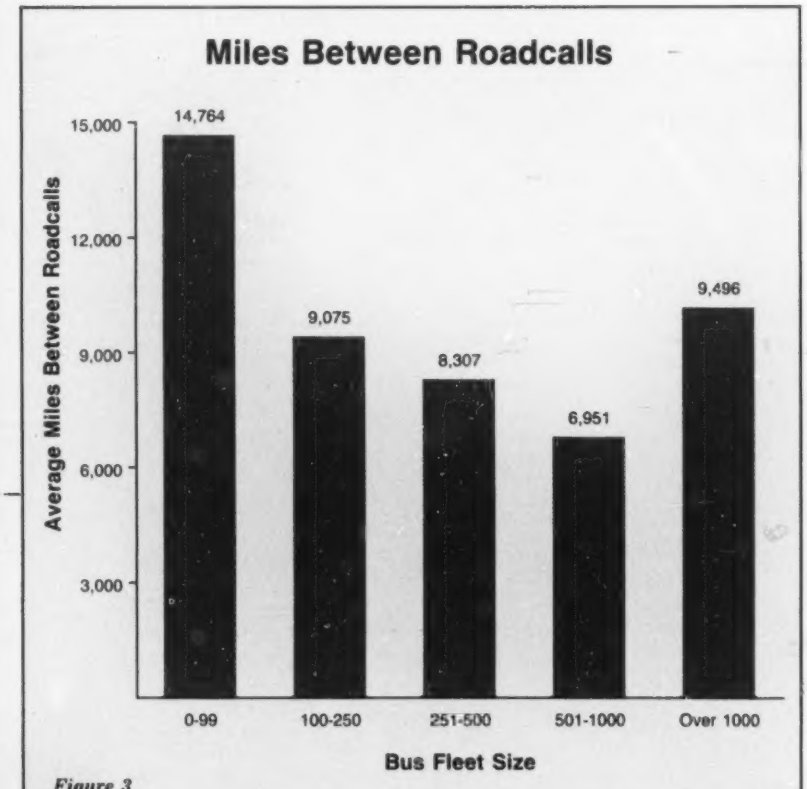

Figure 3

Survey results show that smaller fleets experience a greater mean distance between roadcalls, while fleets ranging between 501 to 1,000 vehicles experience the least distance between roadcalls.

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5/20/88

May/June 1988

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Wichita Gets The Ameribus

Special Rail Transit Section

Plus: Keep Cool With Air Conditioning
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BOBIT PUBLISHING

May / June 1988

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Rail Transit.....p. 39

On the cover: Chance Ameribus; photography by Tom Dean.

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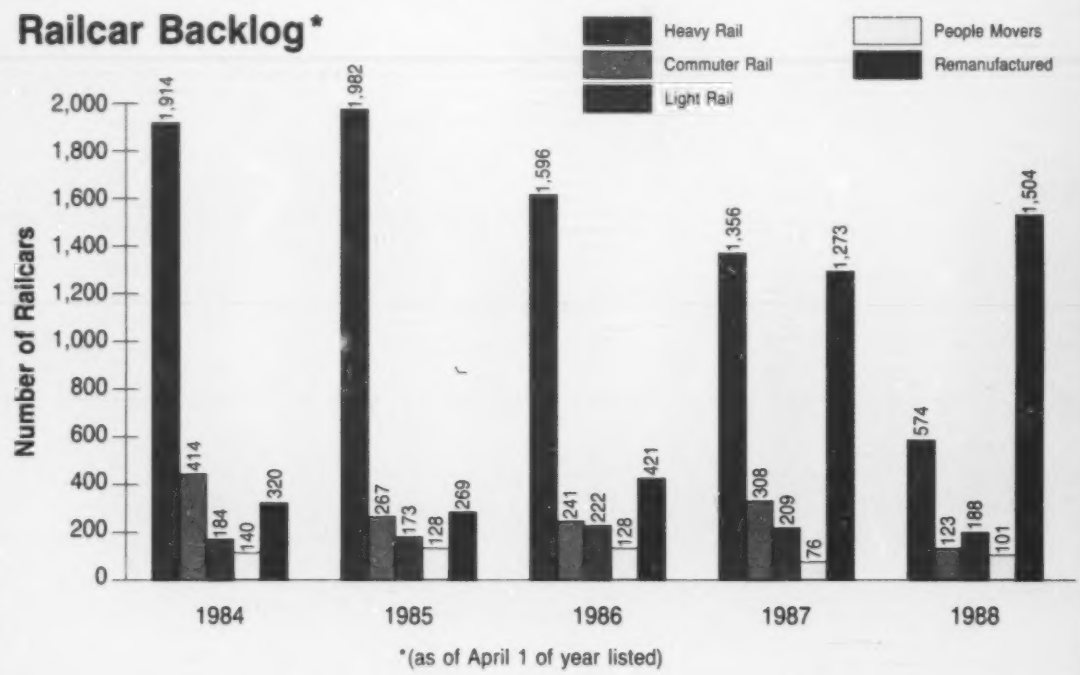
Backlog Survey Shows A Drop In Orders

In *METRO's* exclusive survey, the number of new railcar orders — especially heavy rail — drops.



For the first time, the number of remanufactured railcars has surpassed the total number of new railcars on order. The commuter railcar and remanufacturing figures do not include locomotives. People movers include automated guideway trains and monorails.

Recently, the number of railcars being remanufactured surpassed the number of new railcars on order by transit authorities in North America according to the results of the 1988 *METRO Magazine* Railcar Backlog Survey. In addition, the number of new railcars on order continues to dwindle, falling 63% in four years.

As of April 1, 1988, a total of 2,490 railcars, including 986 new and 1,504 remanufactured railcars, were on order from various manufacturers. The railcars have been ordered by 19 different agencies representing 15 cities, and are valued at $1.5 billion. This compares to last year's figures of 1,964 new and 1,273 remanufactured railcars valued at $2.5 billion.

The drop can be attributed to the expiration of Safe Harbor Leasing and the lack of new rail system start ups over the last few years.

The Safe Harbor Leasing Act was an arrangement by which publicly-owned transit authorities could reap the benefits of depreciation. Under the arrangement, public agencies sold railcars to private corporations and then leased them back.

METRO Magazine Railcar Backlog Survey

(As of April 1, 1988)

City/Authority	Vehicles Outstanding*	Value (In millions)	Manufacturer	Delivery Date
Boston/MBTA	30 CR	$ 20	MBB	10/88
	43 LR	43	Kinki-Sharyo	9/88
	48 HR	45	UTDC	10/88
Chicago/O'Hare Airport	13 AGT	11	MATRA Transit	12/90
Dallas/Dallas Co. Utilities & Reclamation Dist.	4 PM	N/A	Westinghouse	10/89
District of Columbia/WMATA	18 HR	18	BREDA	8/88
Jacksonville/JTA	2 AGT	1.8	MATRA Transit	10/88
Long Beach/LACTC	54 LR	69.6	Nippon Sharyo	5/90
Miami/Florida DOT	18 CR	18	UTDC	8/88
	5 Locomotives	1	Morrison-Knudsen	6/88
New Jersey/NJ Transit	12 CR	9.5	Bombardier	12/88
	13 Remanufactured	4.7	Morrison-Knudsen	10/88
New York/Metro North	100 Remanufactured	43	Morrison-Knudsen	12/89
	4 Remanufactured**	N/A	Morrison-Knudsen	8/88
	10 Remanufactured**	43	Brown Boveri	1990
New York/NYCTA	190 HR	209	Kawasaki	5/89
	75 HR	84	Westinghouse	9/88
	285 Remanufactured	116	Morrison-Knudsen	1989
	280 Remanufactured	110 est.	Morrison-Knudsen	1989
	172 Remanufactured	64.6	Sumitomo	1988
	108 Remanufactured	40.7	GE	1988
	384 Remanufactured	N/A	C. Itoh	1988
	88 Remanufactured	N/A	NYCTA	1989
New York/PATH	74 Remanufactured	37	Kawasaki-Nisho Iwai	7/88
Orlando/Walt Disney World	72 MRV	43	TGI	11/89
Orlando/Orlando Airport	10 PM	N/A	Westinghouse	10/89
Philadelphia/SEPTA	26 HR	44	ASEA Traction	12/89
San Diego/MTDB	21 ALRV	21	Siemens/Duewag	6/89
	20 ALRV	21	Siemens-Duewag	3/90
San Francisco/BART	141 HR	225.6	Sofferval	10/89
San Jose/SCCTA	6 LR	6	UTDC	12/88
Toronto/GO Transit	63 CR	82.7 (C)	UTDC	2/89
	16 Locomotives	36 (C)	GMDD	6/88
Toronto/TTC	44 ALRV	81 (C)	UTDC	1/89
	76 HR	112 (C)	UTDC	3/89

*These figures represent the number of railcars that still need to be delivered as of April 1, 1988 and not the original amount ordered in the contract.

**Locomotives

AGT = Automated guideway transit; ALRV = Articulated light rail vehicles; CR = Commuter rail; HR = Heavy rail; LR = Light rail; MRV = Monorail vehicles; PM = People mover

However, the provision expired on Dec. 31, 1987. To qualify for the tax benefits, railcars had to be delivered and in revenue service by that date. Consequently, transit agencies rushed to have their rolling stock in service by the due date.

The other reason for the diminishing number of railcar orders is the lack of new major rail systems. With the exception of Los Angeles, which is constructing a heavy rail subway and a light rail line from downtown to Long Beach, its largest suburb, no new starts have been launched for several years. However as the chart on page 40 shows, many cities are planning new systems and still others are constructing extensions.

The absence of new orders also sent the value of railcars on backlog spiraling downward. This year, new railcars on backlog are worth $1.1 billion compared to $2 billion in 1987, a nearly 50% drop. Meanwhile, the value of remanufactured cars on order remained relatively steady.

The drop in the number of new railcar orders is apparent in all types of railcars except for people movers. The reductions in this year's survey include only 574 heavy railcars, down 58% from last year; 123 commuter railcars, down 60%, and 188 light rail vehicles, down 10% from last year.

Among established heavy rail systems, only SEPTA in Philadelphia made a new order for railcars. The remainder of the vehicles in the backlog survey are outstanding deliveries from previous orders. Meanwhile MARTA in Atlanta; MMTA in Baltimore, and the NYCTA and PATH in New York all completed taking delivery of heavy rail vehicles from previous orders.

One bright spot is in the field of people mover vehicles, which includes monorails and automated guideway trains (AGT). This segment grew nearly 25% compared to last year.

The last two years have seen the emergence of remanufacturing as an important economic factor in the size of railcar fleets.

Remanufacturing consists of stripping down a railcar and rebuilding it. Around an existing bare metal frame new underflooring, lights, doors and traction motors may be installed to make the rebuilt railcar virtually brand new in componentry.

"Transit agencies will always look at getting new railcars, but they are also going to take a harder look at remanufacturing now that it is a successful alternative," said Mike Monteferrante, eastern area manager of marketing and sales for Morrison-Knudsen Co, Inc. in Hornell, N.Y.

Morrison-Knudsen, which is one of the leaders in the railcar remanufacturing business, completely overhauls vehicles for $400,000 to $500,000 each. This compares to the average price of $1- to $1.1-million for a new railcar.

The orders listed in the survey represent only signed contracts and do not include numerous rail projects in the planning stages. M

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Rail Transit Rolls Forward

Thirty cities have rail transit systems in place, and more are joining the list as the American public demands rail transit.

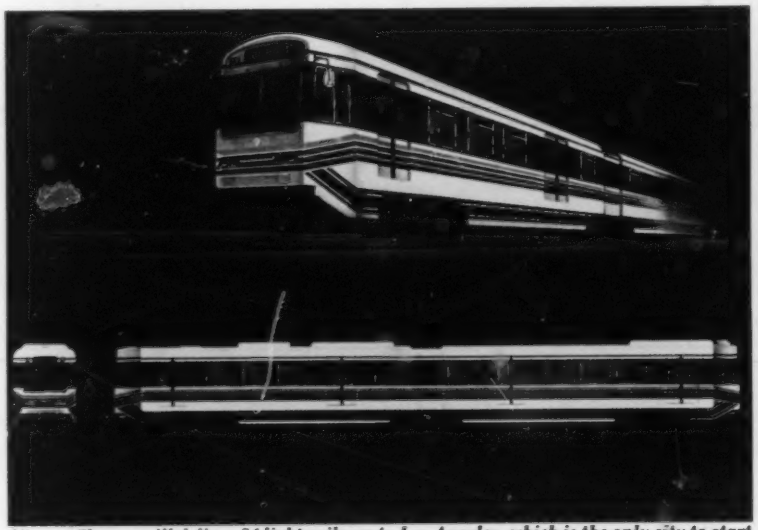
Dallas Area Rapid Transit is planning for it; the Los Angeles County Transportation Commission is constructing it; and the Port Authority of New York and New Jersey (PATH) is upgrading and expanding it. These three transit authorities, like dozens of agencies across the nation, are utilizing rail transit to solve mass transportation problems.

In 1987, APTA estimated that the nation's 52 automated guideway systems in 30 cities served more than 2.9 billion passengers, a number that industry sources say indicates a bright future for all types of rail transit systems. From high speed rail bullet-trains that travel upwards of 200 mph to monorail people movers, technology is expanding the horizons for rail transit.

Most projects, however, involve the use of conventional light and heavy rail technology. Where lines are in place, transit authorities are upgrading signal technology, renovating track and structure, and constructing extensions. Other agencies are purchasing right-of-way in order to lay new track.

For 1988, it appears that rail transit continues to roll forward, in spite of a continued decline in federal funds. Funds for rail capital and operating assistance are apportioned according to Section 3 and Section 9 of the Surface Transportation Act of 1987.

In the last four years, the fiscal year budget for rail has dropped nearly 50% from a high of approximately $2.3 billion in FY 1985 to $1.3 billion in FY 1987. For FY 1988, approximately $1.2 billion has been apportioned. Rail capital budget requests for FY 1989 stand at $800 million, with UMTA asking for a zero budget for operating assistance in FY 1989.



Nippon Sharyo will deliver 54 light railcars to Los Angeles, which is the only city to start a new major rail project in the last few years.

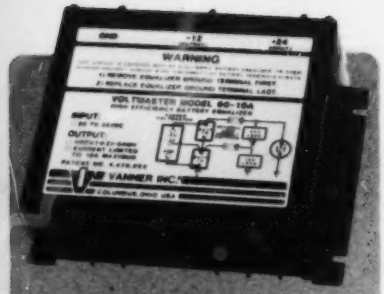
States such as California, Nevada, Florida, and Pennsylvania are earmarking funds for high speed rail transit, while on the local front, transit agencies are using sales taxes and bonds to cover costs. Public interest is sparked by the possibility of high speed rail networks that could link cities. Every day, thousands of transit users experience their first monorail ride at Disney World's Epcot center which, incidently, should receive the first of 72 new cars from Bombardier this summer.

East Coast rail developments

The East Coast has always led the way when it comes to rail transit, largely due to an abundance of existing rail systems and dense populations. Many of the major projects and improvements are slated for East Coast cities.

In New York City, where subway ridership reached a 12-year high in 1987, the **New York City Transit Authority** has begun the second phase of its $6.4 billion program to upgrade the total system. New subway cars are on order and renovations and repairs of 230 miles of track continue.

The **Long Island Rail Road**, which carries 272,000 passengers a day, opened its John D. Caemmerer West Side Storage Yard in June 1987. At the Jamaica station com-



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Rail Transit In North America

(As of April 1, 1988)

City/Authority	Heavy Rail	Commuter Rail	Light Rail	People Mover	Inclined Plane	High Speed Rail
Anaheim/Disneyland				★		
Atlanta/MARTA	★					
Baltimore/MMTA	★	★	✓			
Boston/MBTA	★	★	★			
Buffalo/NFTA			★			
Calgary/CT			★			
Chattanooga/CARTA					★	
Chicago/CTA	★	★				
Chicago O'Hare Airport				●		
Cincinnati-Cleveland HSR						✓
Cleveland/GCRTA	★		★			
Dallas/DART			✓			
Dallas/Co. Util. Dist.				●		
Dallas-Houston HSR						✓
Denver/RTD			■			
Denver/TCA			✓			
Detroit/SEMTA	■		■			
Detroit-Chicago HSR						✓
Detroit/DTC				★		
Edmonton/ET			★			
Fort Worth/Dillards			★			
Houston/Metro			✓			
Jacksonville/MTA				●		
Johnstown/CCTA					★	
Las Vegas/LVPMC				●		
Las Vegas-Los Angeles HSR						✓
Lindenwold/PATCO	★					
Los Angeles/LACTC			●			
Los Angeles/SCRTD	●					
Mexico City	★		★			
Miami/Metro-Dade	★			★		
Miami/Tri-Co. Commuter		●				
Miami-Orlando-Tampa HSR						✓
Minneapolis/MTC			✓			
Montreal/MUCTC	★	★				
Morgantown/West Va. Univ.				★		
NY-NJ/PATH	★					
Newark/NJ Transit		★	★			
New Orleans/RTA			★			
New York City/NYCTA	★					
New York City/Metro North		★				
New York City/LIRR		★				
Oakland/BART	★					
Orlando/GOAA				★		
Orlando/Walt Disney World				★		
Philadelphia/SEPTA	★	★				
Phil.-Pitts. HSR						✓
Pittsburgh/PATransit		★	★		★	
Pittsburgh/Stadium Dev.				✓		
Portland/Tri-Met			★			
Sacramento/SRTD			★			
St. Louis/E-W Gateway			✓			
San Diego/SD Trolley		✓	★			
San Francisco/Caltrans		★				
San Francisco/MUNI*			★			
San Jose/SCCTA		★	★			
Seattle/Metro Seattle			★	★		
Tampa/HARTA				★		
Toronto/TTC	★		★			
Toronto/GO Transit		★				
Vancouver/RTS	★					
Washington/WMATA	★					

★—In operation ●—Under construction ✓—In planning ■—Dormant *Also cable cars

plex, work is scheduled to begin to improve train routing and dispatching at a station that serves eight of the railroad's nine commuter lines.

At **Metro North Commuter Railroad**, track renovation and station modernization have been the major concerns. The system continues with an $890 million infrastructure renewal program, with projects that include the restoration of the Park Avenue tunnel. The 1987 delivery of M-4 triplex cars enables Metro North to increase its capacity on the crowded New Haven line.

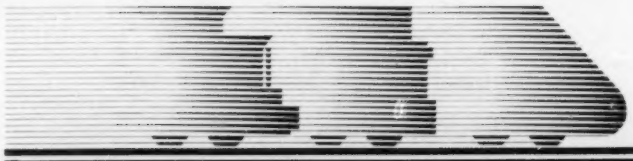
The **Port Authority of New York and New Jersey**, which celebrated its 25th anniversary in 1987, broke ground for a $205 million car maintenance shop, and approved a $40 million project to employ a fiber optic monitoring network between its remote stations and the John F. Hoban Operations Control Center.

In February, PATH began a $19 million overhaul of Pavonia station, scheduled to be completed in September 1989. The overhaul is a key element of the agency's $830 million capital improvement plan.

New Jersey Transit Corporation heads into the second quarter with more than $60 million in grants from UMTA, some of which will be used for locomotive overhauls and station rehabilitation. Operations commenced in October 1987 at the $123 million Meadows Maintenance Complex, and property acquisition activities continued for the 15-mile bus and light rail Waterfront line.

Another UMTA recipient was the **Massachusetts Bay Transportation Authority** in Boston. More than $32 million in grants are slated for commuter rail improvements. Meanwhile, a $56 million project to reconstruct track on the Red Line and Green Line has entered the last phase ahead of schedule.

On the Green Line, the program includes signal improvements and a tunnel ventilation system, while the Red Line will upgrade and modernize eight stations. Scheduled for delivery by October 1988 are 30 MBB railcars costing an estimated $20 million and 48 heavy railcars from UTDC with a pricetag of approximately $45 million.



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In Philadelphia, the **Southeastern Pennsylvania Transportation Authority** moves ahead with change-outs and overhauls of railcars, as well as the delivery of new cars. Bombardier coaches and cab-control cars, and AEM-7 electric locomotives were delivered for use in push-pull service on the Northeast corridor. In early 1988, SEPTA contracted with Amtrak/ASEA to supply 26 mass transit railcars; prototype cars should be delivered by 1990.

Washington Metropolitan Area Transit Authority recently awarded $40 million for tunnel construction on the Green Line between the future Fort Totten and West Hyattsville stations. The first portion of the Green Line is scheduled to open in late 1991, with the remainder to open in late 1993, thus extending the WMATA system to nearly 90 miles.

Completed in late 1987, the Bethesda Metro Center is the key to a public-private joint venture in which the Alan Kay Co. leased 2.3 acres from WMATA. The private firm will handle development of the site.

May 1987 marked the opening of the last major link in the **Port Authority of Allegheny County** 10.5 mile light rail system, ending nearly two-thirds of a century of debate over the construction of the subway tunnel.

A proposed public-private venture concerns a 2,300-foot people mover for downtown Pittsburgh. If constructed, private backers propose to link the system with three 35-story office buildings in the parking lot of Three Rivers Stadium. The project, estimated to cost $200 million, would span the Allegheny River.

Heavy rail is the topic at the **Maryland Mass Transit Administration** where the Metro rapid transit line opened a six-mile extension in mid-1987. Slated for this year is a 1.5-mile extension to Johns Hopkins Hospital, with another four corridors under consideration for future rail lines.

Mid- and Southwest

A variety of rail projects are underway or in the planning stages in the Mid- and Southwest states. In Chicago, the **Chicago Transit Authority** covers 215 miles of track with 143 stations dispersed on six routes. February 1987 marked the groundbreaking for the $433 million nine-mile Southwest rapid transit line to Midway Airport which is expected to be in operation by 1993.

Also moving ahead is work on the $132 million Howard-Dan Ryan through-route, a realignment program to link the two most heavily used routes in the system. The through-route will connect the Cermak elevated station on the Dan Ryan line with the Roosevelt station in the Green Street subway. In addition, the $111 million people mover project at O'Hare Airport is currently underway, with construction provided by the French firm, MATRA Transit.

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Metra will initiate a $76 million capital improvement program to support its 500 route miles. Due to be completed by 1990 is an extensive program that includes track, structural, station, rolling stock and facility improvements.

Design work continues on the 18-mile fixed guideway system proposed by the **East-West Gateway Coordinating Council** in St. Louis, Mo. Using existing infrastructure, the Metro Link line will incorporate the historic East Bridge and the Union Station baggage tunnel. The $335 million system is scheduled to be in operation by 1991.

Dallas, Texas, has joined the list of cities planning rail transit. The **Dallas Area Rapid Transit** has outlined a 93-mile rail system to be completed in 2010. The first phase involves two segments totaling 14.5 miles of track that will feed the downtown area.

In late March, DART approved a $58 million pricetag for the purchase of 34 miles of railroad right-of-way from the Southern Pacific Transportation Co. The agreement will provide DART with 22% of the right-of-way needed for its proposed rail system. A contract for rail construction should be awarded in 1989.

Also in the Dallas area, work proceeds on a 2.7-mile people mover in the planned community of Las Colinas. Design and construction of the community began in the late 1970s, and phase one will include a guideway system connecting retail, hotel, and office complexes. The people mover system, which is under the authority of the Dallas County Utilities and Reclamation District, should be in service by October 1989.

Meanwhile, in Jacksonville, Fla., a three-quarter mile portion of the first phase of the city's 2.5-mile people mover system is under construction. When complete, the project will cross the river and connect the downtown area to the new convention center. A second system of 4.5 miles of track is in the preliminary engineering stages and an environmental impact study is underway for an additional two miles.

A new 65-mile commuter line will link West Palm Beach and Miami Airport when the **Tri-County Commuter Rail Organization** opens its 15-station railroad in late 1988. The line will eventually connect with downtown Miami through the **Metro-Dade Transit Agency** Metrorail rapid transit system. Metro-Dade, which is planning to open its 21st station by mid-1988, has worked with the private sector in the development of station sites.

By adding 2,000 feet of track, the **Greater Orlando Aviation Authority** will double the size of its people mover at the Orlando Airport. The system, which employs rubber-wheel technology, carries 32,000 passengers an hour over a route that crosses a lake and a landscaped "island" that separate the terminals. Ten cars built by Westinghouse are slated to be delivered in October 1989.

Other developments in the South include the December 1987 opening

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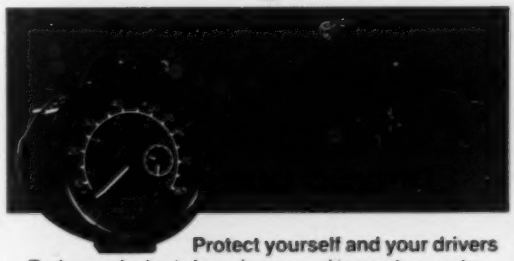

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of **Metropolitan Atlanta Rapid Transit Authority**'s Chamblee station in Atlanta, Ga. This segment adds 2.7 miles to the system, extending MARTA's route to 27 miles. June 1988 is the scheduled opening date for the 2.6 mile extension to Hartsfield International Airport, a project which is estimated to cost $21.5 million. MARTA also expects to begin construction on a 3.1-mile extension beyond the Chamblee station.

The **Regional Transit Authority** in New Orleans, which operates the oldest continously operating street railway system in the world, has initiated a $44 million renovation program for replacing all 13 miles of track on the National Historic Landmark streetcar line. Also on tap is a rehabilitation program for 35 1920's era streetcars. The target date for completion is 1991.

West Coast rail developments

Rail transit has a patchwork history on the West Coast. For two decades, San Francisco has led the way, and now other cities are following suit. Portland, Seattle, Denver, and San Diego all have rail systems in place. Los Angeles, famous for its love affair with the automobile, is the most recent city to turn to rail transit.

The **Los Angeles County Transportation Commission** moves forward with construction on its $690 million light rail line that will link Long Beach with Los Angeles. Currently, 16.5 miles of welded rail have been laid down. Track laying, except for the portion that enters the Metro Rail tunnel in downtown Los Angeles, should be complete in seven months.

Meanwhile, the LACTC's 16-mile Norwalk to El Segundo line cannot proceed with track laying until the Century Freeway is completed in 1990. Trains are scheduled to be running by 1993.

In spite of the discovery of underground contaminants and other problems, tunneling continues on the **Southern California Rapid Transit District**'s $1.25 billion Metro Rail subway line. The completion date for the 4.4-mile segment has been pushed back from April 1992 to January 1993.

Santa Clara residents received a Christmas present on December 11, 1987 when the **Santa Clara County Transportation Agency** opened the first segment of its $420 million light rail project. The 6.5 mile segment is part of a 20-mile line that is expected to be fully operational by 1991.

The $372 million, 20-mile Guadalupe Corridor system continues with construction. In March, work on the southern portion of the line began. The project, which is to be completed in 1989, is a cooperative effort between the county of Santa Clara, the SCCTA, Caltrans, and the city of San Jose.

San Francisco continues to embrace rail, with work beginning this year on the **San Francisco Municipal Railway** Metro turnaround at the Embarcardero tunnel. The $60 million project will enable MUNI to increase the maximum number of trains on the line from 30 to 48.

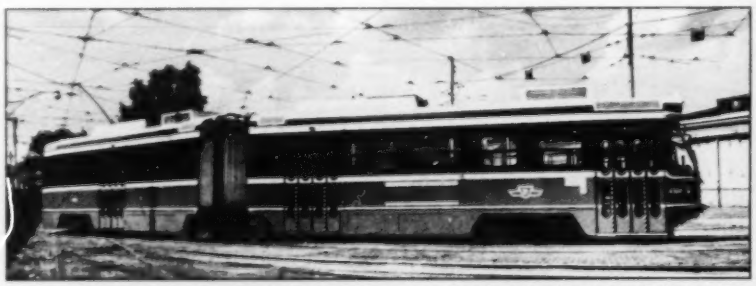
The **San Francisco Bay Area Rapid Transit District** is examining proposals to extend the system in Alameda and Contra Costa counties. BART, which carries more than 60 million passengers a year, faced local funding problems when voters in one of the counties rejected a sales tax increase.

Moving south to San Diego, the **Metropolitan Transit Development Board (MTDB)** continues with construction work on a $103 million extension of the Euclid line into the suburbs. Construction began in October 1987 on the La Mesa-El Cajon segment.

Meanwhile, Colorado's **Transit Construction Agency** plans to build an 18-mile light rail line that is scheduled to be operational by 1990. Acting as the TCA's executive director is Jim Graebner, former APTA president and former transportation director for the SCCTA. Estimated to cost between $700 and $850 million, the project would be financed by Denver businessmen who would tax themselves to generate funds and public sources.

Canadian rail transit

Heading even further north to Canada, rail transit is still rolling strong. In Toronto, the **Toronto Transit Commission** is utilizing its Network 2011, a major rapid transit study, to identify and schedule projects. The TTC will continue in 1988 with engineering design on the proposed Sheppard Subway, a 5.5-mile, six-station line. A station modernization program began in 1980 continues, with nine out of 12 stations completed. Two more stations, including the Bloor/Yonge station, are undergoing renovations. **GO Transit**'s eight-mile extension to Whitby is expected to be complete by December 1988, while by 1992, extensions to Burlington are scheduled to be on line.



New to Toronto's streetcar tracks is the Articulated Light Rail Vehicle (ALRV) 4200. Here, the $1.37 (C) million vehicle is being prepared for service. The car was built by the Urban Transportation and Development Corp. in Kingston, Ont. The TTC will purchase 52 ALRVs in the next two years.

Elsewhere in Canada, a light-rail extension from Edmonton to the University of Alberta is ready to begin, and in Calgary, structural work on a Northwest line extension is due to begin. **Calgary Transit**'s light rail system connects with bus routes at a transit mall in downtown Calgary. ▣

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TMC Legacy Continues
100 Largest Transit Fleets
APTA Debates Accessibility

METRO Magazine

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BOBIT PUBLISHING

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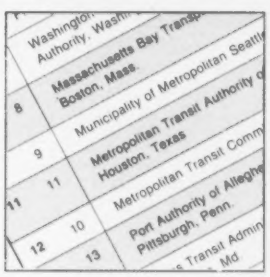

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On the cover:
NYCTA RTS bus in New York City.

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100 Largest Transit Bus Fleets

The Minneapolis MTA reported a decrease of 271 transit buses despite a 3.9 percent increase in ridership during the first quarter of 1988.

This is just one of the results from this year's *METRO Magazine* 1988 survey of North America's 100 Largest Transit Bus Fleets. This year's survey represents 52,799 transit buses, which is 2,162 more buses this year than last year's survey. Meanwhile, the increase in total buses correlates with an increase in transit ridership. According to APTA's quarterly transit ridership report, there was a 3.1 percent increase in passenger trips during the first quarter of 1988.

Of the transit vehicles represented, 2,092 were articulated buses, an increase among the 100 largest fleets of 228 vehicles, or 12 percent, over last year. Among the 36 fleets with articulated buses, Seattle Metro continued to report the largest fleet with 353 vehicles. OC Transpo in Ottawa, Ontario listed a fleet of 164 articulated buses, followed by the CTA in Chicago with 145. These articulated buses are ideal for transporting passengers along heavily traveled routes in large metropolitan areas, and can be seen as one method by which transit agencies are fashioning their fleets to meet route fluctuations.

The largest 100 transit bus fleets also reported an increase in the number of small buses under 30-feet in length to 2,455 buses, which is 620 more small buses than reported in last year's survey, or a 33 percent increase. Last year, 38 fleets reported owning 1,835 small buses. Among the agencies reporting the largest fleets of buses under 30-feet in length are SEMTA in Detroit which lists 200 vehicles, followed by WED Transportation in Lake Buena Vista, Fla. with 187 and PACE Suburban Bus in Arlington Heights, Ill. with 179.

In contrast to increases in articulated buses and small buses, the number of electric trolley buses remained approximately level. This year, eight agencies reported operating 1,225 electric trolleys, compared to 1,235 trolleys last year, a slight decrease. The trolley buses are concentrated mainly among West Coast transit properties, where the vehicles can be utilized year round because of the temperate climate. MUNI in San Francisco leads the way with 345 trolleys, followed by Vancouver RTA with 244, and Seattle Metro with 155.

Although the total number of buses increased, more agencies showed a decrease in total buses than agencies that added vehicles. Forty two agencies reported a decrease in the number of vehicles compared to 1987, while 35 showed an increase. There were 14 fleets with the identical number of vehicles and nine authorities were new to the survey this year. NJ Transit reported the largest increase with 218 more buses.

Once again, the NYCTA continues to be the largest transit fleet with 3,659 vehicles which is six fewer than last year. Earning honors as the one hundredth largest fleet in North America this year is Windsor Transit in Windsor, Ontario with 101 buses.

Respondents were asked to provide fleet size data as of June 30, 1988. Thus, this fifth annual roundup contains the most up-to-date figures available. In compiling the data, however, the editors only contacted fleets that, based on our knowledge of the industry, were likely to qualify. We did not survey every known transit bus fleet in North America. The data was crosstabulated with APTA figures from its Transit Passenger Vehicle Fleet Inventory, which provides data as of January 1, 1988.

Largest 100 Transit Bus Fleets (As of June 30, 1988)

RANK		TRANSIT AUTHORITY, CITY	FLEET MIX/AGE				FLEET SIZE	
'88	'87		35 Ft. & Over	Under 35 Ft.	Artic-ulated	Avg. Age (Yrs.)	1988 Total	± Over 1987
1	1	New York City Transit Authority, New York, N.Y.	3,659	0	0	5.7	3,659	–7
2	2	New Jersey Transit Corporation, Maplewood, N.J.	2,888	0	110	2.5	2,998	+218
3	3	Southern California Rapid Transit District, Los Angeles, Calif.	2,515	62	40	7.6	2,577	+119
4	4	Chicago Transit Authority, Chicago, Ill.	2,101	0	145	10.0	2,246	–1
5	—	Montreal Urban Community Transit Corporation, Montreal, Quebec	1,797	35	0	N/A	1,834	—
6	6	Toronto Transit Commission, Toronto, Ontario	1,549	19	30	8.0	1,737*	–47
7	7	Southeastern Pennsylvania Transportation Authority, Philadelphia, Pa.	1,565	0	50	6.2	1,622*	+43
8	5	Washington Metropolitan Area Transportation Authority, Washington, D.C.	1,441	40	76	9.0	1,557	+198
9	8	Massachusetts Bay Transportation Authority, Boston, Mass.	1,262	114	0	7.0	1,426*	SAME
10	9	Municipality of Metropolitan Seattle, Seattle, Wash.	640	0	353	7.6	1,148*	–160
11	11	Metropolitan Transit Authority of Harris County, Houston, Texas	942	35	50	5.0	1,027	–24
12	10	Metropolitan Transit Commission, Minneapolis, Minn.	821	28	82	8.3	931	–271
13	13	Port Authority of Allegheny County, Pittsburgh, Penn.	910	0	50	6.0	925	–6
14	14	Mass Transit Administration of Maryland, Baltimore, Md.	879	21	0	6.9	900	–1
15	15	San Francisco Municipal Railway, San Francisco, Calif.	443	—	100	11.0	888*	SAME
16	20	Ottawa-Carlton Regional Transportation Commission, Ottawa, Ontario	585	79	164	11.0	828	+48
17	16	Vancouver Regional Transit System, Vancouver, British Columbia	581	0	0	13.0	825	–33
18	12	Dallas Area Rapid Transit, Dallas, Texas	720	55	30	7.0	805	+141
19	19	Greater Cleveland Regional Transit Authority, Cleveland, Ohio	738	66	0	8.5	804	+23
20	17	Alameda-Contra Costa Transit District, Oakland, Calif.	734	7	60	7.0	791	–59
21	24	Pace Suburban Bus Division, Arlington Heights, Ill.	586	179	0	10.0	766	+25
22	22	Regional Transportation District, Denver, Colo.	668	0	89	6.2	757	–13
23	23	Bi-State Development Agency, St. Louis, Mo.	730	0	0	N/A	730	–6
24	18	Edmonton Transit, Edmonton, Alberta	716	0	0	11.0	716*	–122
25	21	Metropolitan Atlanta Rapid Transit Authority, Atlanta, Ga.	645	0	56	7.0	701	–34

*TROLLEY BUSES: TTC—139 MBTA—64 MUNI—345
SEPTA—110 Seattle Metro—155 Vancouver—244 ET—100

Largest 100 Transit Bus Fleets

RANK		TRANSIT AUTHORITY, CITY	FLEET MIX/AGE				FLEET SIZE	
'88	'87		35 Ft. & Over	Under 35 Ft.	Artic-ulated	Avg. Age (Yrs.)	1988 Total	± Over 1987
26	25	Calgary Transit, Calgary, Alberta	598	3	0	N/A	601	– 5
27	26	Santa Clara County Transit District, San Jose, Calif.	516	40	30	7.5	586	– 6
28	—	Michigan Department of Transportation, Detroit, Mich.	581	0	0	9.3	581	—
29	27	Orange County Transit District, Garden Grove, Calif.	440	135	0	N/A	575	SAME
30	30	Milwaukee County Transit System, Milwaukee, Wis.	510	0	40	8.7	553	+ 23
31	29	Tri-County Metropolitan Transportation (Tri-Met), Toronto, Ontario	458	0	87	11.2	541	– 6
32	31	Metro-Dade Transportation Administration, Miami, Fla.	533	8	0	5.3	541	+ 18
33	33	VIA Metropolitan Transit, San Antonio, Texas	389	65	0	8.7	477	– 6
34	34	City & County of Honolulu — The Bus, Honolulu, Hawaii	444	17	8	5.9	469	+ 9
35	28	Southeastern Michigan Transportation Authority, Detroit, Mich.	241	200	0	9.0	442	– 131
36	35	Regional Transit Authority, New Orleans, La.	410	18	0	6.0	428	– 29
37	36	Niagara Frontier Transportation Authority, Buffalo, N.Y.	425	2	0	8.5	427	SAME
38	32	Connecticut Transit, Hartford, Conn.	420	0	0	12.0	420	+ 83
39	—	Liberty Lines, Yonkers, N.Y.	398	12	61	12.0	410	—
40	40	Metropolitan Bus Authority, Hato Rey, Puerto Rico	380	0	12	9.0	392	+ 60
41	37	Utah Transit Authority, Salt Lake City	360	15	0	6.8	383	– 7
42	38	Queen City Metro, Cincinnati, Ohio	379	0	0	7.0	379	SAME
43	39	Central Ohio Transit Authority, Columbus, Ohio	332	10	0	5.0	342	– 1
44	45	Westchester County Transit System, White Plains, N.Y.	242	35	61	9.5	338	+ 26
45	41	Phoenix Transit System, Phoenix, Ariz.	263	0	56	8.0	319	– 7
46	43	San Mateo County Transit District, Burlingame, Calif.	259	19	40	5.0	318	SAME
47	44	Transit Authority of River City, Louisville, Ky.	270	33	14	8.6	317	– 1
48	46	Metropolitan Suburban Bus Authority, East Meadow, N.Y.	305	0	0	6.9	305	– 2
49	54	Regional Transit Service, Rochester, N.Y.	215	62	17	8.0	294	+ 55
50	49	Kansas City Area Transportation Authority, Kansas City, Mo.	262	27	0	9.8	289	+ 10

Largest 100 Transit Bus Fleets

RANK		TRANSIT AUTHORITY, CITY	FLEET MIX/AGE				FLEET SIZE	
'88	'87		35 Ft. & Over	Under 35 Ft.	Artic-ulated	Avg. Age (Yrs.)	1988 Total	± Over 1987
51	48	San Diego Transit Corp., San Diego, Calif.	235	0	45	12.0	283	SAME
52	42	Queens Surface Corp., Flushing, N.Y.	266	0	0	9.0	266	-59
53	51	Indianapolis Public Transportation Corp., Indianapolis, Ind.	217	7	30	6.5	260	SAME
54	55	Capital District Transportation Authority, Albany, N.Y.	209	29	8	+.0	246	+10
55	53	Rhode Island Public Transit Authority, Providence, R.I.	240	0	5	N/A	245	+2
56	52	Golden Gate Bridge Highway & Transportation District, San Raphael, Calif.	235	4	0	10.0	239	-20
57	57	Memphis Area Transit Authority, Memphis, Tenn.	202	14	20	6.1	236	+15
58	60	Broward County Mass Transit Division, Pompano Beach, Fla.	236	0	0	6.6	236	+23
59	50	Capital Metropolitan Transit Authority, Austin, Texas	151	34	0	2.5	235	-29
60	—	WED Transportation Systems, Lake Buena Vista, Fla.	43	187	0	N/A	230	—
61	65	Mississauga Transit, Mississauga, Ontario	192	0	38	10.0	230	+34
62	56	Miami Valley Regional Transit Authority, Dayton, Ohio	152	8	0	6.9	228*	SAME
63	59	Trailways Commuter Transit, Dallas, Texas	227	0	0	3.5	227	+8
64	—	Triboro Coach Corp., Jackson Heights, N.Y.	222	0	0	7.8	222	—
65	47	Tidewater Transportation District Commission, Norfolk, Va.	132	60	0	N/A	222	-64
66	63	Pioneer Valley Transit Authority, Springfield, Mass.	215	7	0	N/A	222	+17
67	61	Toledo Area Regional Transit Authority, Toledo, Ohio	210	0	0	9.0	210	SAME
68	62	Greater Richmond Transit Co., Richmond, Va.	197	10	0	11.0	207	SAME
69	67	GO Transit, Downsview, Ontario	200	4	0	9.0	204	+20
70	58	Sacramento Regional Transit District, Sacramento, Calif.	200	0	0	16.0	200	-21
71	66	Central NY Regional Transportation Authority Syracuse, N.Y.	174	25	0	4.2	199	+6
72	—	Montgomery County Ride-On, Rockville, Md.	0	196	0	7.4	196	—
73	64	Madison Metro Transit System, Madison, Wis.	186	9	0	N/A	195	-6
74	69	Hillsborough Area Regional Transit Authority, Tampa, FL	177	0	0	4.8	177	+3
75	68	Long Beach Transit, Long Beach, Calif.	172	0	0	7.0	172	-10

*TROLLEY BUSES: **Miami Valley—68**

Largest 100 Transit Bus Fleets

RANK		TRANSIT AUTHORITY, CITY	FLEET MIX/AGE				FLEET SIZE	
'88	'87		35 Ft. & Over	Under 35 Ft.	Artic-ulated	Avg. Age (Yrs.)	1988 Total	± Over 1987
76	70	Metro Area Transit, Omaha, Neb.	150	19	0	4.6	169	–3
77	—	Command Bus Company, Brooklyn, N.Y.	168	0	0	N/A	168	—
78	71	Jacksonville Transportation Authority, Jacksonville, Fla.	140	13	10	6.7	164	–5
79	—	Omnitrans, San Bernardino, Calif.	75	82	0	9.0	157	—
80	88	Charlotte Transit System, Charlotte, N.C.	155	0	0	8.5	155	+40
81	73	Pierce County Public Transportation Benefit Area, Tacoma, Wash.	148	0	0	10.0	148	–1
82	77	Public Transit Administration, El Paso, Texas	97	48	0	8.0	145	+6
83	81	Fort Worth Transportation Authority, Fort Worth, Texas	119	25	0	5.0	144	+15
84	76	Sun Tran, Tucson, Ariz.	118	21	0	7.0	139	SAME
85	80	Metro Regional Transit Authority, Akron, Ohio	117	16	0	7.0	133	–1
86	74	Santa Monica Municipal Bus Lines Santa Monica, Calif.	0	0	0	6.9	129	–16
87	86	Community Transit of Snohomish County, Everett, Wash.	123	5	0	6.0	128	+9
88	83	Metropolitan Transit Authority, Nashville, Tenn.	126	0	15	7.5	126	+3
89	75	Pinellas Suncoast Transit Authority, Clearwater, Fla.	122	0	0	10.0	124	–16
90	89	North San Diego County Transit District Oceanside, Calif.	124	0	0	4.5	124	+13
91	84	Albuquerque Transit, Albuquerque, N.M.	107	15	0	10.0	122	+2
92	78	North Suburban Mass Transit District, Des Plaines, Ill.	121	0	0	12.0	121	–17
93	87	Des Moines Metropolitan Transit Authority, Des Moines, Iowa	52	45	0	11.6	120	+2
94	85	Spokane Transit Authority, Spokane, Wash.	108	0	10	7.5	118	–2
95	98	Peninsula Transportation District Commission, Hampton, Va.	98	19	0	10.0	117	+19
96	82	Jamaica Buses, Inc. Jamaica, N.Y.	114	0	0	8.5	114	+11
97	91	Pee Dee Regional Transportation Authority, Florence, S.C.	7	104	0	5.0	111	+6
98	—	Kalamazoo Department of Transportation, Kalamazoo, Mich.	103	4	0	N/A	107	—
99	93	Metropolitan Tulsa Transit Authority, Tulsa, Okla.	92	4	0	7.8	103	SAME
100	95	Windsor Transit, Windsor, Ontario	101	0	0	11.6	101	SAME